

DRAFTFacility Name: MOUND STREET POWER PLANTLocation: ST. LOUIS, MISSOURIEPA Region: VIIPerson(s) in charge of the facility: Herman Gellman, President MSC3620 North Hall StreetSt. Louis, MO 63147Name of Reviewer: Otavio SilvaDate: 5/25/88**General description of the facility:**

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The Mound Street Power Plant is located in St. Louis, MO, approximately

one mile north of the St. Louis Arch, along the Mississippi River

(Ref. 1). The facility is located in an industrial area adjacent to

the river. Several large grain storage facilities are all located

within 1/4 mile of the facility. The tank farm is adjacent to the

power plant, separated by several yards of paved road. Currently, the

site is occupied by the former Mound St. Power Plant building, and the

Apex Oil Company St. Louis Terminal (Ref. 2, Page 2-2). The site

is not secured and access to the buildings is relatively unrestricted.

Aside from locks on most doors and a fence surrounding the petroleum

storage tanks, no security is present. A former coal gasification

Scores: $S_M =$ ($S_{gw} =$ $S_{sw} =$ $S_a =$)

 $S_{FE} =$ $S_{DC} =$

FIGURE 1
HRS COVER SHEET

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Superfund

Mound Street
126 000 0093682

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5/25/88

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facility (Laclede Gas co.) is located on this site. The coal gasification facility was evaluated for HRS purposes. Wastes associated with coal gas sites include cyanides, metals and polynuclear aromatic hydrocarbons. The Mound St. Power Plant facility exhibits petroleum contamination only. Samples from this site were screened for PCB contamination. No PCB contamination was detected.

FIT QUALITY ASSURANCE TEAM

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

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INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: Mound Street Power Plant

LOCATION: St. Louis, Missouri

DATE SCORED: April 1, 1988

PERSON SCORING: Otavio Silva

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):

Preliminary Assessment of the Mound Street Power Plant site, TDD # F-07-8708-29, PAN # FM00579PA; prepared by E & E/FIT for Region VII EPA, February 11, 1988.

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

Air Route
Fire and Explosion
Direct Contact

COMMENTS OR QUALIFICATIONS:

This is a draft HRS. The low score for this site is primarily due to the fact that there are no population targets, there are no observed releases, and no documentation of leaking containment is presently available.

GROUND WATER ROUTE

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1. OBSERVED RELEASE

Contaminants detected (5 maximum):

Unknown - coal tar waste are potentially buried in unlined pits or stored in leaking containers (Ref. 2, Page A-1).

Rationale for attributing the contaminants to the facility:

NA

* * *

SCORE = 0

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

The potential aquifers of concern for the site region are divided into five discrete units: Post-Maquoketa, Kimmswick Joachim, St. Peter-Everton, Powell-Gasconade, and Eminence-Lamotte. The Post-Maquoketa group includes the strata above the Kimmswick formation to the surface. Below this aquifer group lies the Maquoketa Shale. Based on current information, the shale acts as an aquitard. Group two is the Ordovician Age Kimmswick-Joachim Aquifer. Near the top of this unit is the Decordy Formation which probably acts as a confining bed composed of shales and interbedded limestones. The remaining lower three aquifers are separated primarily on the basis of unconformities. It is likely these aquifer groups, in descending order, the St. Peter-Everton, Powell-Gasconade and the Eminence-Lamotte are hydraulically connected (Ref. 2, Pages 4-7 and 4-8).

For the purposes of this HRS only the alluvial aquifer, the Kimmswick Formation, will be considered as the aquifer of concern since they are hydrologically separated from the lower aquifer.

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

6 Feet (Ref. 3, Page 34)

Depth from the ground surface to the lowest point of waste disposal/storage:

Wastes are potentially buried below the water table. The maximum depth of burial is unknown. (Ref. 2, Page 2-12).

SCORE = 3

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

33.91 inches (Ref. 4)

Mean annual lake or seasonal evaporation (list months for seasonal):

35.6 inches (Ref. 5, Page 63)

Net precipitation (subtract the above figures):

$33.91 - 35.60 = -1.69$ inches
(-10 to 5 inches, Ref. 6, Page 12)

SCORE = 1

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

The soils in the area are classified as fine loams to fine silty clays loams. On site, the soils belong to the urban land-bottom land unit. This unit consists of areas in which more than 85% of surface covered by asphalt, concrete, buildings or other impervious material. The area was originally bottom land which was built-up to protect the site from flooding. The amount of fill in the area can range from 0 to 200 feet. Variability of the soils in the area makes identification impractical without a detailed on-site soil investigation.

Permeability associated with soil type:

Fine loams to fine silty clays loames (Ref. 2, Page 4-1). The best classification for approximate range of hydraulic conductivity fits on 10^{-5} cm/sec (Ref. 6, Page 15).

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Coal Tar (Sludge/liquid)
Fuel Oil or Transformer Oil (Oily Waste)
Cyanide Salts (inorganic chemicals) solids
(Ref. 2, A-1)

SCORE = 3

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3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

- 1) Two coal tar tanks with a combined volume of 107688 gallons. However, it is likely that the tanks have leaked.
- 2) Burial pits for the lower ends of coal tar are likely. No documentation of waste or leaking containment is available.

Method with highest score:

SCORE = 0

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Coal Tar -- Benzo(A)pyrene--18 (Ref. 7)
 Xylene-----18
 Cyanide-----18

Compound with highest score:

Benzo(A)pyrene

SCORE = 18

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Two Tar Tanks containing 53844 gallons each (full several times a year)
Oxide Wastes - unknown
Tar burial - unknown

Basis of estimating and/or computing waste quantity:

Since no documentation of leaks exist this route characteristic score = 0

SCORE = 0

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5. TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Ground water used for commercial or industrial needs. The water needs of the city and surrounding community are met primarily through the withdrawal of surface water from the Missouri Mississippi and Meramac Rivers. The municipal water intakes for the city of St. Louis and surrounding communities are approximately 9 miles upstream from the site (Ref. 2, Page 4-7).

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

None, since there is not any ground water usage.

Distance to above well or building:

None

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

None

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

None expected due to the dense urban nature around the site.

Total population served by ground water within a 3-mile radius:

None

SCORE = 3

SURFACE WATER ROUTE

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1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Not evaluated since the potential wastes are buried and there is no known surface contamination.

Rationale for attributing the contaminants to the facility:

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Name/description of nearest downslope surface water:

Average slope of terrain between facility and above-cited surface water body in percent:

Is the facility located either totally or partially in surface water?

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Is the facility completely surrounded by areas of higher elevation?

1-Year 24-Hour Rainfall in Inches

Distance to Nearest Downslope Surface Water

Physical State of Waste

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Method with highest score:

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4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compounds(s) evaluated

Compound with highest score:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Basis of estimating and/or computing waste quantity:

* * *

5. TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

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Is there tidal influence?

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

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Total population served:

Name/description of nearest of above water bodies:

Distance to above-cited intakes, measured in stream miles.

AIR ROUTE

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1. OBSERVED RELEASE

Contaminants detected:

No potential since the alleged wastes were buried and no surface contamination has been documented to date. In addition a levee precludes overland flow from entering the Mississippi River.

Date and location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

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Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

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Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

NOT EVALUATED
FIRE AND EXPLOSION

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1. CONTAINMENT

Hazardous substances present:

Type of containment, if applicable:

* * *

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

* * *

NOT EVALUATED

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Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Distance to Nearest Population

Distance to Nearest Building

Distance to Sensitive Environment

Distance to wetlands:

Distance to critical habitat:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

NOT EVALUATED

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

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Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Population Within 2-Mile Radius

Buildings Within 2-Mile Radius

NOT EVALUATED

DIRECT CONTACT

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1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

* * *

2. ACCESSIBILITY

Describe type of barrier(s):

* * *

3. CONTAINMENT

Type of containment, if applicable:

* * *

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Compound with highest score:

* * *

NOT EVALUATED

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5. TARGETS

Population within one-mile radius

Distance to critical habitat (of endangered species)

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HRS DOCUMENT LOG SHEET		SITE NAME Mound Street Power Plant	
		CITY St. Louis	STATE MO
		IDENTIFICATION NUMBER	
REFERENCE NUMBER	DESCRIPTION OF REFERENCE		
1	USGS Topographic Map, Granite city, Ill.-Mo., 7.5 Minute Quadrangle, 1968 Revised		
2	Preliminary Assessment of the Mound Street Power Plant Site, TDD # F-07-8708-29, PAN # FM00579PA; Prepared by E & E/FIT for Region VII EPA, February 11, 1988.		
3	USDA and SCS, Soil Survey of St. Louis County and St. Louis City, MO, April 1982		
4	NOAA (National Oceanic and Atmospheric Administration) Environmental Data and Information Service, and National Climatic Center, Climatology of the United States No. 81, Missouri, Asheville, N.C., September 1982.		
5	U.S. Department of Commerce, Environmental Science Services Administration, Environmental Data Service, Climatic Atlas of the United States, 1979		
6	The Mitre Corporation, Uncontrolled Hazardous Wastes Site Ranking System, A Users Manual, Virginia, August 1982.		
7	Sax, Irving N., 1984, Dangerous Properties of Industrial Materials, New York, Van Nostrand Reinhold Co.		

REGION VII FIT
SITE INSPECTION
HRS EVALUATION WORKSHEET

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Site Name: Laclede Gas St. Louis City: St. Louis, MO
WST #07M00579 Site #Y33 CERCLIS #MOD
Date of PA Completion 04/21/88, by Eric Hess
Major Contaminant(s) Benzo(a)pyrene and cyanide

<u>Scoring Scenarios</u>	<u>Current Score</u>	<u>Highest Score</u>
Ground Water Route (Sgw) =	<u>0.0</u>	<u>6.12</u>
Surface Water Route (Sw) =	<u>0.0</u>	<u>18.18</u>
Air Route (Sa)	<u>0.0</u>	<u>55.64</u>
Total Score (Sm)	<u>0.0</u>	<u>34.75</u>

Potential Releases (Probability)

<input checked="" type="radio"/> (H)	M	L	Nil	- Ground Water
<input checked="" type="radio"/> (H)	M	L	Nil	- Surface Water
<input checked="" type="radio"/> (H)	M	<input checked="" type="radio"/> (L)	Nil	- Air
<input checked="" type="radio"/> (H)	M	L	Nil	- On-Site/Direct Contact

HRS-2 Comments

Ground Water Route: Monitoring wells needed to document release.
Hydrogeology evaluation. There are no ground water targets documented.

Surface Water Route: Seepage meters needed to document a ground water release to surface water recreation threat will raise the score.

Air Route: Particulate transport could pose a risk at this site. This would elevate the score to the estimated maximum 34.75. Potential to release evaluation may raise score also.

On-Site Route: There is a great possibility that PAH and cyanide contaminants are present in the surface soils found on site.

Probability to Score above 28.5 (after SI)
[] High [] Medium [X] Low

Priority For SI
[] High [X] Medium [] NFRAP

Comments: Although the site may not score above 28.5, the potential exists for the large amounts of wastes to be buried at this site. The existence of these wastes and their migration into the Mississippi River and the local environments should still pose a major concern for the maintenance of environmental quality.

Concurrence
[] ESD [] SPFD

***** GROUND WATER ROUTE WORK SHEET *****

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	Current Score	Highest Score	Ref.	Comments
1. <u>OBSERVED RELEASE</u>	<u>0</u>	<u>45</u>	<u> </u>	<u>Release likely, need monitoring wells.</u>
2. <u>ROUTE CHARACTERISTICS</u>				
DEPTH TO AQUIFER OF CONCERN (2)	<u>6</u>	<u> </u>	<u>2,3</u>	<u> </u>
NET PRECIPITATION	<u>1</u>	<u> </u>	<u>4,5</u>	<u> </u>
PERMEABILITY OF UNSATURATED ZONE	<u>1</u>	<u> </u>	<u>6</u>	<u>Soil sample needed</u>
PHYSICAL STATE	<u>3</u>	<u> </u>	<u>2</u>	<u> </u>
ROUTE CHARACT. SCORE =	<u>11</u>	<u> </u>		<u> </u>
3. <u>CONTAINMENT</u>	<u>0</u>	<u>3</u>	<u>2</u>	<u>Tank may have deteriorated or coal tar may have been disposed of in pits or trenches not yet identified or located. Possible surface oil spills.</u>
4. <u>WASTE CHARACTERISTICS</u>				
TOXICITY/PERSISTENCE	<u>18</u>	<u>18</u>	<u>2</u>	<u>Benzo(a)pyrene</u>
HAZARDOUS WASTE QUANTITY	<u>0</u>	<u>8</u>	<u>2</u>	<u>Highest score based on the identification of leaking tanks.</u>
WASTE CHARACT. SCORE =	<u>23</u>	<u>26</u>		<u> </u>
5. <u>TARGETS</u>				
GROUND WATER USE (3)	<u>3</u>	<u>3</u>	<u>2</u>	<u>Industrial and commercial</u>
DISTANCE TO NEAREST WELL/ POPULATION SERVED	<u>0</u>	<u>0</u>	<u>2</u>	<u>No drinking water wells</u>
TOTAL TARGETS SCORE =	<u>3</u>	<u>3</u>		<u> </u>
GROUND WATER ROUTE SCORE = (57,330/100 factor	<u>0.0</u>	<u>6.12</u>		<u> </u>

() Multiplier

***** SURFACE WATER ROUTE WORK SHEET *****

	Current Score	Highest Score	Ref.	Comments
1. <u>OBSERVED RELEASE</u>	<u>0</u>	<u>45</u>		
2. <u>ROUTE CHARACTERISTICS</u>				
FACILITY SLOPE AND INTERVENING TERRAIN	<u>0</u>	<u>0</u>	<u>2</u>	
1-yr., 24-hr. RAINFALL	<u>0</u>	<u>0</u>	<u>6</u>	
DISTANCE TO NEAREST SURFACE WATER (2)	<u>0</u>	<u>0</u>	<u>2</u>	<u>Mississippi River</u>
PHYSICAL STATE	<u>0</u>	<u>0</u>		
ROUTE CHARACT. SCORE =	<u>0</u>	<u>0</u>		
3. <u>CONTAINMENT</u>	<u>0</u>	<u>3</u>	<u>2</u>	<u>Same as Ground Water Routes</u>
4. <u>WASTE CHARACTERISTICS</u>				
TOXICITY PERSISTENCE	<u>18</u>	<u>18</u>	<u>2</u>	
HAZ. WASTE QUANTITY	<u>0</u>	<u>8</u>	<u>2</u>	<u>If oxide waste found tanks deter-</u> <u>mine to have leaked and burial of</u> <u>tar is verified</u>
WASTE CHARACT. SCORE =	<u>23</u>	<u>26</u>		<u>HRS II evaluation may give</u> <u>different score</u>
5. <u>TARGETS</u>				
SURFACE WATER USE (3)	<u>3</u>	<u>6</u>	<u>2</u>	<u>If recreation use documented</u>
DISTANCE TO A SENSITIVE ENVIRONMENT (2)	<u>0</u>	<u>0</u>	<u>2</u>	<u>HRS II = Score</u>
POPULATION SERVED/DISTANCE TO DOWNSTREAM WATER INTAKE	<u>0</u>	<u>4</u>	<u>2</u>	
TOTAL TARGETS SCORE =	<u>6</u>	<u>10</u>		
SURFACE WATER ROUTE SCORE = (64,350/100 factor)	<u>0.0</u>	<u>18.18</u>		
() Multiplier				

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***** AIR ROUTE WORK SHEET *****

	Current Score	Highest Score	Ref.	Comments
1. <u>OBSERVED RELEASE</u> DATE AND LOCATION	<u>0</u>	<u>45</u>	<u> </u>	<u>Hi-vol sampling for particulates.</u> <u>If surface contamination is</u> <u>documented</u>
2. <u>WASTE CHARACTERISTICS</u>				
REACTIVITY AND INCOMPATIBILITY	<u>1</u>	<u> </u>	<u>1</u>	<u> </u>
TOXICITY (3)	<u>3</u>	<u>30</u>	<u> </u>	<u>Cyanide in surface soils</u>
HAZARDOUS WASTE QUANTITY	<u>5</u>	<u>50</u>	<u> </u>	<u>Assume contents of tanks leaked</u> <u>~ 2,100 drums</u>
WASTE CHARACT. SCORE =	<u>8</u>	<u>80</u>	<u> </u>	<u> </u>
3. <u>TARGETS</u>				
POPULATION WITHIN 4 MILES	<u>27</u>	<u>27</u>	<u> </u>	<u>> 10,00 within 1 mile radius</u>
DISTANCE TO SENSITIVE ENVIRONMENT (2)	<u>0</u>	<u>0</u>	<u> </u>	<u> </u>
LAND USE	<u>3</u>	<u>30</u>	<u> </u>	<u>Commercial/industrial use within</u> <u>1/4 mile</u>
TOTAL TARGETS SCORE =	<u>30</u>	<u>30</u>	<u> </u>	<u> </u>
AIR ROUTE SCORE = (35,100/100 factor)	<u>0</u>	<u>55.64</u>	<u> </u>	<u> </u>
() Multiplier				

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CURRENT SCORE	S	S ²
Groundwater Route Score (S _{gw})	0.00	0.00
Surface Water Route Score (S _{sw})	0.00	0.00
Air Route Score (S _a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		0.00
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		0.00
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M -$		0.00

HIGHEST SCORE	S	S ²
Groundwater Route Score (S _{gw})	14.29	204.08
Surface Water Route Score (S _{sw})	18.18	330.58
Air Route Score (S _a)	55.64	3,079.12
$S_{gw}^2 + S_{sw}^2 + S_a^2$		3,613.78
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		60.11
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M -$		34.75